

DR. FLETCHER'S REMARKS -- MARINER 10 HONOR AWARD CEREMONY AT
JET PROPULSION LABORATORY, AUGUST 16, 1974

(PROGRAM OPENS WITH DR. PICKERING MAKING INTRODUCTORY AND
WELCOMING REMARKS, AFTER WHICH HE INTRODUCES THE SPECIAL GUESTS.
HE NEXT TURNS THE MEETING OVER TO DR. FLETCHER.)

DR. FLETCHER: "DR. PICKERING, HONORED GUESTS, FRIENDS AND
CO-WORKERS, IT IS A GREAT PRIVILEGE AND A PERSONAL PLEASURE FOR
ME TO PARTICIPATE IN THIS MARINER 10 HONOR AWARDS CEREMONY AT
THE JET PROPULSION LABORATORY TODAY. THIS IS ESPECIALLY TRUE,
BECAUSE IT IS THE SECOND TIME I HAVE COME, AS THE ADMINISTRATOR
OF NASA, TO JPL FOR SUCH AN OCCASION. THE FIRST TIME WAS FOR
MARINER 9, WHEN WE HONORED THE INDIVIDUALS AND GROUPS THAT
MADE THAT MISSION TO MARS SUCH AN OUTSTANDING SUCCESS.

DR. FLETCHER'S REMARKS -- PIONEER 10 HONOR AWARD CEREMONY AT
AMES RESEARCH CENTER, AUGUST 16

(PROGRAM OPENS WITH DR. HANS MARK MAKING INTRODUCTORY AND
WELCOMING REMARKS, AFTER WHICH HE INTRODUCES THE SPECIAL GUESTS.
HE NEXT TURNS THE MEETING OVER TO DR. FLETCHER.)

DR. FLETCHER: "DR. MARK, HONORED GUESTS, FRIENDS AND
CO-WORKERS, IT IS A GREAT PRIVILEGE AND A PERSONAL PLEASURE
FOR ME TO PARTICIPATE IN THIS PIONEER HONOR AWARDS CEREMONY
AT AMES RESEARCH CENTER TODAY. THIS IS ESPECIALLY TRUE,
BECAUSE IT IS THE FIRST TIME THE ADMINISTRATOR OF NASA HAS
COME TO THIS CENTER FOR SUCH AN OCCASION. SO, FOR WHAT IT IS
WORTH, YOU CAN ADD THIS AS ANOTHER "FIRST" TO THE LONG LIST OF
BRILLIANT ACHIEVEMENTS ALREADY IN THE RECORD OF PIONEER 10.

TODAY IS ACTUALLY A "DOUBLEHEADER" FOR ME, AND FOR NASA AND PLANETARY EXPLORATION AS WELL. EARLIER TODAY I WAS AT THE AMES RESEARCH CENTER TO HELP PAY TRIBUTE TO THE PIONEER 10 TEAM. IT IS A GREAT THING FOR ME, FOR NASA, AND FOR PLANETARY EXPLORATION THAT WE HAVE HAD, WITHIN A FEW MONTHS OF EACH OTHER, TWO SUCH EPOCHAL ACHIEVEMENTS -- PIONEER 10 AND MARINER 10. "TEN" SEEMS TO HAVE BEEN OUR LUCKY NUMBER THIS TIME.

THIS DECADE WILL LONG BE REMEMBERED FOR THE BOLD INITIATIVES AND HIGH SCIENTIFIC PRODUCTIVITY OF THE PLANETARY PROGRAMS OF THE UNITED STATES. OUR PREVIOUS MARINER MISSIONS TO MARS AND VENUS, AND THE SEVERAL PIONEER MISSIONS EXPLORING INTERPLANETARY SPACE, SET HIGH STANDARDS IN BOLDNESS AND IN SCIENTIFIC VALUE. NOW WE HAVE MADE TWO MORE BOLD THRUSTS -- ONE TO VENUS AND THE INNERMOST PLANET MERCURY WITH MARINER 10; THE OTHER TO THE FIRST AND LARGEST OF THE OUTER PLANETS, JUPITER, WITH PIONEER 10. BOTH MISSIONS HAVE AGAIN MET OUR HIGHEST STANDARDS OF ENGINEERING EXCELLENCE AND SCIENTIFIC PRODUCTIVITY.

TODAY IS ACTUALLY A "DOUBLEHEADER" FOR ME, AND FOR NASA AND PLANETARY EXPLORATION AS WELL. LATER TODAY I WILL BE GOING TO THE JET PROPULSION LABORATORY TO HELP PAY TRIBUTE TO THE MARINER 10 TEAM. IT IS A GREAT THING FOR ME, FOR NASA, AND FOR PLANETARY EXPLORATION THAT WE HAVE HAD, WITHIN A FEW MONTHS OF EACH OTHER, TWO SUCH EPOCHAL ACHIEVEMENTS -- PIONEER 10 AND MARINER 10. "TEN" SEEMS TO HAVE BEEN OUR LUCKY NUMBER THIS TIME.

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TO BE SURE, FUTURE GENERATIONS OF SPACE SCIENTISTS AND ENGINEERS WILL LOOK BACK UPON MARINER 10 AND ~~PIONEER 10~~ AS ^{ONE} ~~SOME~~ OF THE TINY FIRST STEPS OF EARTHMEN SENDING THEIR CRUDE MACHINES OUT INTO THE SOLAR SYSTEM. BUT I BELIEVE THESE FUTURE GENERATIONS WILL STILL RECOGNIZE THAT IT TOOK THE BEST SCIENCE, ENGINEERING, AND MANAGEMENT OF OUR TIME TO TAKE THESE FIRST STEPS SUCCESSFULLY. THE SPACE TEAMS OF THE FUTURE WILL CERTAINLY SOLVE MANY MORE SCIENTIFIC MYSTERIES AND CREATE MANY ENGINEERING WONDERS, BUT THEY WILL BE HARD-PRESSED TO MATCH, LET ALONE SURPASS, THE CONCENTRATED CREATIVITY, ENTHUSIASM, AND DEDICATION THAT HAVE MADE ~~BOTH PIONEER 10 AND~~ MARINER 10 ^A PROUD SYMBOLS ^A OF OUR TIME, AND LASTING LANDMARKS ON THE LONG ROAD OF HUMAN PROGRESS.

~~SO FAR, I HAVE SPOKEN EQUALLY ABOUT PIONEER 10 AND MARINER 10. YOU CAN APPRECIATE MY POSITION. THE ONE QUESTION I REALLY CAN'T ANSWER IS WHICH PROJECT WAS BETTER, MARINER 10 OR PIONEER 10. BUT, WHEN I RETURN HERE TO JPL AND SEE AGAIN MY MANY FRIENDS OF THE MARINER 10 TEAM I ADMIT I GET ESPECIALLY ENTHUSIASTIC ABOUT MARINER, JUST AS I WAS ESPECIALLY ENTHUSIASTIC ABOUT PIONEER 10 THIS MORNING AT AMES.~~

TO BE SURE, FUTURE GENERATIONS OF SPACE SCIENTISTS AND ENGINEERS WILL LOOK BACK UPON ~~MARINER 10~~ AND PIONEER 10 AS SOME OF THE TINY FIRST STEPS OF EARTHMEN SENDING THEIR CRUDE MACHINES OUT INTO THE SOLAR SYSTEM. BUT I BELIEVE THESE FUTURE GENERATIONS WILL STILL RECOGNIZE THAT IT TOOK THE BEST SCIENCE, ENGINEERING, AND MANAGEMENT OF OUR TIME TO TAKE THESE FIRST STEPS SUCCESSFULLY. THE SPACE TEAMS OF THE FUTURE WILL CERTAINLY SOLVE MANY MORE SCIENTIFIC MYSTERIES AND CREATE MANY ENGINEERING WONDERS, BUT THEY WILL BE HARD-PRESSED TO MATCH, LET ALONE SURPASS, THE CONCENTRATED CREATIVITY, ENTHUSIASM, AND DEDICATION THAT HAVE MADE BOTH PIONEER 10 AND ~~MARINER 10~~ PROUD SYMBOLS OF OUR TIME, AND LASTING LANDMARKS ON THE LONG ROAD OF HUMAN PROGRESS.

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THIS AUDIENCE KNOWS WELL THE FACTS AND FIGURES OF MARINER 10'S REMARKABLE PERFORMANCE. BUT FOR THE RECORD I DO WANT TO NOTE THAT MARINER 10 WAS THE FIRST SPACECRAFT TO USE THE GRAVITY OF ONE PLANET TO PROPEL IT ON TO ANOTHER; AND WAS THE FIRST SPACECRAFT TO SEND BACK PICTURES AND DATA ON FOUR MEMBERS OF THE SOLAR SYSTEM -- THE EARTH, THE MOON, VENUS, AND MERCURY. IT WILL ALSO BE THE FIRST SPACECRAFT TO FLY PAST AND COLLECT DATA ON THE SAME PLANET TWO AND MAYBE THREE TIMES, WHEN IT MEETS UP AGAIN WITH MERCURY IN SEPTEMBER AND YET AGAIN NEXT SPRING.

I WON'T PRETEND THAT MARINER 10 DIDN'T GIVE US SOME ANXIOUS MOMENTS ALONG THE WAY. BUT SO FAR, WHEN THE TIME CAME TO PERFORM, THE SPACECRAFT AND ITS EXPERIMENTS CAME THROUGH WITH FLYING COLORS. IT HAS DELIVERED SUCCESSFULLY ON ALL ITS PLANNED OBJECTIVES. EVERYTHING THAT WE GET IN THE SEPTEMBER ENCOUNTER WILL BE A BONUS. MARINER 10 IS TRULY A REMARKABLE SCIENTIFIC AND ENGINEERING ACHIEVEMENT.

THIS AUDIENCE KNOWS WELL THE FACTS AND FIGURES OF PIONEER 10'S REMARKABLE PERFORMANCE. BUT FOR THE RECORD I DO WANT TO NOTE THAT PIONEER 10 WAS THE FIRST SPACECRAFT FROM EARTH TO CROSS THROUGH THE ASTEROID BELT AND TO PROVE THAT THERE ARE NO BARRIERS TO MAN'S EXPLORATION OF THE OUTER PLANETS EXCEPT THE BARRIERS OF TIME AND DISTANCE, AND THESE WE CAN OVERCOME. WHAT IT HAS CONTRIBUTED TO OUR KNOWLEDGE OF JUPITER AND SOME OF ITS MOONS IS ENORMOUS AND PROBABLY WILL BE KNOWN TO MANY OF YOU HERE TODAY.

I WANT TO NOTE THAT PIONEER 10 HAS GIVEN US OUR FIRST CLOSE UP SCIENTIFIC DATA AND PICTURES, AND A MUCH BETTER UNDERSTANDING, OF THE GIANT PLANET JUPITER AND ITS SURROUNDINGS. AND IT HAS ^{HELPED} ~~ENABLED~~ US TO REDIRECT PIONEER 11 WHICH CAN MAKE ^{FIVE YEARS FROM NOW} ~~THE FIRST CLOSE UP STUDIES OF SATURN AS WELL AS JUPITER.~~

I WANT TO NOTE THAT PIONEER 10 IS THE FIRST SPACECRAFT TO RELY ENTIRELY ON NUCLEAR POWER, AND THAT THE SUCCESSFUL INTRODUCTION OF THIS NEW TECHNOLOGY HAS PROFOUND IMPLICATIONS FOR OUR ABILITY TO UNDERTAKE INTENSIVE EXPLORATION OF THE OUTER PLANETS IN THE NOT SO DISTANT FUTURE.

WHEN IT COMES TO MARINER 10'S SCIENTIFIC ACHIEVEMENTS, I SHOULD BE LISTENING RATHER THAN TALKING. TODAY'S AWARD WINNERS AND HONORED GUESTS SHOULD REALLY SPEAK ON WHAT MARINER 10 MEANS TO PLANETARY SCIENCE. SUFFICE IT FOR ME TO SAY THAT MARINER 10 DATA SEEMS SURE TO FILL IN MANY OF THE PRINCIPAL PREVIOUS GAPS IN THE COMPARATIVE STUDY OF THE INNER PLANETS AND LEAD US TO A BETTER COMPREHENSION OF THEIR SIMILARITIES AND DIFFERENCES, AND OF THE EVOLUTION AND DESTINY OF THE EARTH ITSELF.

BUT, IN ANOTHER SENSE, ONE OF THE MOST VALUABLE CONTRIBUTIONS OF THE MARINER 10 TEAM TO THE SPACE PROGRAM HAS BEEN IN THE FIELD OF COST CONTROL. I WANT TO PAY ESPECIAL TRIBUTE AGAIN TODAY, AS WE DID WITH A SPECIAL AWARD LAST FALL EVEN BEFORE MARINER 10 WAS LAUNCHED, TO THE MEMBERS OF THE MARINER 10 TEAM WHO SO SUCCESSFULLY HELD THE PROGRAM TO ITS SCHEDULE, ITS GOALS, AND ITS PREDETERMINED COST ESTIMATES.

IN SHORT, PIONEER 10, BECAUSE OF ITS PROVEN RELIABILITY, ITS SCIENTIFIC PRODUCTIVITY, AND ITS SUCCESSFUL SOLUTIONS TO THE MOST DIFFICULT PROBLEMS IN SPACE COMMUNICATIONS AND DATA RETURN, ^{MUST} ~~HAS TO~~ BE RECOGNIZED AS ONE OF THE MOST REMARKABLE MACHINES AND ONE OF THE MOST REWARDING PROGRAMS OF THE FIRST 15 YEARS OF NASA.

PIONEER 10 IS THE KIND OF PROGRAM THAT STIRS THE IMAGINATION OF THE AMERICAN PEOPLE AND RENEWS THEIR CONFIDENCE IN THEIR ABILITY TO DEAL WITH THE MANY PROBLEMS WE FACE TODAY.

SO IT IS INDEED A PERSONAL PLEASURE FOR ME, AS WELL AS MY OFFICIAL FUNCTION, TO EXTEND MY HEARTIEST CONGRATULATIONS TO ALL MEMBERS OF THE PIONEER 10 TEAM, ESPECIALLY TO THE INDIVIDUALS AND GROUPS WE ARE HONORING TODAY.

IT IS EXTREMELY IMPORTANT FOR THE LONG RANGE FUTURE OF PLANETARY EXPLORATION AND THE ENTIRE SPACE PROGRAM THAT WE LEARN HOW TO KEEP COSTS TO A MINIMUM EVEN AS WE ADVANCE WITH NEW TECHNOLOGY ACROSS NEW SCIENTIFIC FRONTIERS. MARINER 10 HAS GIVEN US UNIQUE AND INVALUABLE LESSONS IN COST CONTROL. THIS WAS POSSIBLE ONLY BECAUSE OF THE CLEAR UNDERSTANDING AND CLOSE COOPERATION MAINTAINED AMONG THE PROGRAM PEOPLE AT NASA HEAD-QUARTERS, THE PROJECT PEOPLE AT JPL, AND THEIR INDUSTRIAL AND SCIENTIFIC PARTNERS, ESPECIALLY THE SPACECRAFT SYSTEM CONTRACTOR, THE BOEING COMPANY.

ALL IN ALL, MARINER 10 HAS TO BE RECOGNIZED AS ONE OF THE MOST REMARKABLE AND MOST REWARDING PROGRAMS OF THE FIRST 15 YEARS OF NASA. IT IS THE KIND OF PROGRAM THAT STIRS THE IMAGINATION OF THE AMERICAN PEOPLE AND RENEWS THEIR CONFIDENCE IN THEIR ABILITY TO DEAL WITH THE MANY PROBLEMS WE FACE TODAY.

SO IT IS INDEED A PERSONAL PLEASURE FOR ME, AS WELL AS MY OFFICIAL FUNCTION, TO EXTEND MY HEARTIEST CONGRATULATIONS TO ALL MEMBERS OF THE MARINER 10 TEAM, AND ESPECIALLY TO THE INDIVIDUALS AND GROUPS WE ARE HONORING TODAY.

BEFORE I DO THAT

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FIRST, I WOULD LIKE TO GIVE PARTICULAR RECOGNITION TO FOUR KEY MEMBERS OF THE PIONEER 10 TEAM WHO ARE OUR SPECIAL HONORED GUESTS TODAY. EACH OF THESE INDIVIDUALS IS A PREVIOUS RECIPIENT OF A NASA HONOR MEDAL ^{BUT WHO IN ADDITION HAS} ~~WHO HAS ALSO MADE~~ EXCEPTIONAL ACHIEVEMENTS AND OUTSTANDING CONTRIBUTIONS IN THE PIONEER 10 PROGRAM. SO BEFORE WE PROCEED TO PRESENT AWARDS TO OUTSTANDING MEMBERS OF THE PIONEER TEAM WHO HAVE NOT PREVIOUSLY BEEN SO HONORED, I WOULD LIKE THESE PREVIOUS WINNERS OF NASA'S EXCEPTIONAL SCIENTIFIC ACHIEVEMENT MEDAL TO RISE, IF THEY ARE PRESENT, AND RECEIVE OUR RECOGNITION AND APPLAUSE FOR THEIR CONTRIBUTIONS TO PIONEER 10.

ARVYDAS KLIORIS, OF THE JET PROPULSION LABORATORY;
FRANK B. McDONALD OF THE GODDARD SPACE FLIGHT CENTER;
EDWARD SMITH, OF THE JET PROPULSION LABORATORY AND
JOHN H. WOLFE, OF AMES RESEARCH CENTER.

FIRST, I WOULD LIKE TO GIVE PARTICULAR RECOGNITION TO FOUR KEY MEMBERS OF THE MARINER 10 TEAM WHO HAVE BEEN INVITED TO BE OUR SPECIAL HONORED GUESTS TODAY. EACH OF THESE INDIVIDUALS IS A PREVIOUS RECIPIENT OF A NASA HONOR MEDAL WHO HAS ALSO MADE EXCEPTIONAL ACHIEVEMENTS AND OUTSTANDING CONTRIBUTIONS IN THE MARINER 10 PROGRAM. SO BEFORE WE PROCEED TO PRESENT AWARDS TO OUTSTANDING MEMBERS OF THE MARINER 10 TEAM WHO HAVE NOT PREVIOUSLY BEEN SO HONORED, I WOULD LIKE THESE PREVIOUS WINNERS OF NASA'S EXCEPTIONAL SCIENTIFIC ACHIEVEMENT AND EXCEPTIONAL SERVICE MEDALS TO RISE, IF THEY ARE PRESENT, AND RECEIVE OUR RECOGNITION AND APPLAUSE FOR THEIR CONTRIBUTIONS TO MARINER 10.

H. TAYLOR HOWARD, OF STANFORD UNIVERSITY;
GERALD S. LEVY, OF THE JET PROPULSION LABORATORY;
NORMAN F. NESS, OF THE GODDARD SPACE FLIGHT CENTER; AND
NEWTON W. CUNNINGHAM, OF NASA HEADQUARTERS.

IN MAKING THE PRESENTATIONS, I WILL BE GRATEFUL TO
DR. JOHN HAUGLE, DEPUTY ASSOCIATE ADMINISTRATOR OF NASA, IF
HE WILL ASSIST ME BY PRESENTING THE CERTIFICATES. THE CITATIONS
AND NAMES OF RECIPIENTS WILL BE READ BY FRED H. FELBERG,
ASSISTANT LABORATORY DIRECTOR FOR PLANS AND PROGRAMS HERE AT
JPL. I WILL ASK HIM TO READ THE NAMES OF INDIVIDUAL AWARDEES
IN ALPHABETICAL ORDER.

(DR. FLETCHER TAKES HIS PLACE IN LINE TO BEGIN PINNING ON
THE MEDALS AS THE READER STARTS READING.)

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(WHEN THE LAST AWARD HAS BEEN PRESENTED, DR. FLETCHER
RETURNS THE MEETING TO DR. PICKERING.)